Aeronautical Systems Center,
Acquisition Environmental Management

# Stakeholder SENTINEL

Summer 1997 PAM# 97-160 Volume 1, Issue 1

*New, 3-million-gallon tanks tower over the former pond area (in the foreground), which was fenced off during excavation and removal.*

## Air Force project renews 50 acres of desert land

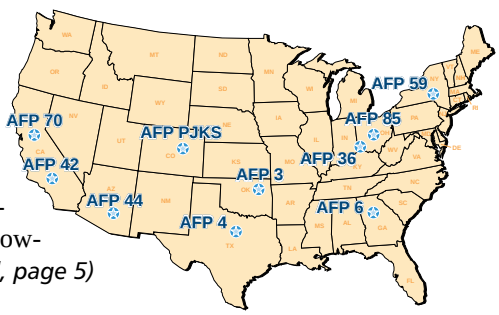
Air Force Plant 44 (AFP 44), located in Tucson, Ariz., recently completed a $55 million environmental cleanup project that removed 35 surface impoundments. The lined ponds stored industrial wastewater and treated hazardous waste from wastewater treatment processes.

The extensive three-year project entailed excavating and disposing off-site more than 93,000 tons of contaminated soil, sludges and debris associated with the ponds, and building six, 3-million-gallon storage tanks to replace the ponds. To ensure future protection, the 66-foot-high tanks are confined inside a concrete containment area.

Another part of the project upgraded the existing Industrial Wastewater Treatment Plant which receives and purifies wastewater generated from manufacturing processes at AFP 44. The upgrades not only have doubled the facility's treatment capacity, enabling over 90 percent to be recycled back into industrial processes, but water is now treated to a quality level higher than a domestic supply, according to project manager John Stallings, Aeronautical Systems Center, Acquisition Environmental Management Directorate.

The final step of the project will renew over 50 acres of land where the ponds once existed. With the help of soil scientists from the University of Arizona, and a botanist specializing in collecting native seeds and grow-

*(See Renewal, page 5)*




The *Stakeholder Sentinel* is published to provide timely information to community members on environmental activities at Air Force industrial plants.

These plants, called Government-Owned, Contractor-Operated (GOCO) facilities, are owned and managed by the Aeronautical Systems Center, Acquisition Environmental Management at Wright-Patterson Air Force Base in Ohio.

The Air Force currently owns 10 GOCOs (see map below), located across the United States. Six of these 10 GOCOs are being sold or leased in accordance with Department of Defense policy. At each of these facilities, environmental protection projects and cleanup programs are taking place.

Stakeholder SENTINEL

Aeronautical Systems Center, Acquisition Environmental Management

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This Air Force newsletter is an authorized publication of the Aeronautical Systems Center, Acquisition Environmental Management Directorate, Wright-Patterson Air Force Base, Ohio. The intent of this publication is to report on environmental activities and programs taking place at 10 industrial plants, located across the United States, which are owned by the Aeronautical Systems Center. Contents of the *Stakeholder Sentinel* are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, or the Department of the Air Force. *Stakeholder Sentinel* is published under contract with IT Corporation, a private firm in no way connected with the U.S. Air Force. Editorial content is edited, prepared and provided by the Public Affairs Office, Environmental Division of the Aeronautical Systems Center. For more information, call 1 (800) 982-7248, ext. 301 or 322; or visit us on the ASC/EM Home Page at: http://www.ascem.wpafb.af.mil.

# Cutting-edge technology tested in Ft. Worth, Texas

**by Libby VanHook,**
**Air Force Materiel Command**
**Public Affairs**

Is it time to return to basics and let nature take care of itself ? For many years, people have used conventional, man-made solutions to clean up environmental contamination. In a current movement toward natural remedies, the Air Force is taking a cutting-edge technology, called phytoremediation from the laboratory to the field. It is currently being tested at the Naval Air Station Joint Reserve Base (formerly Carswell Air Force Base), Fort Worth, Texas.

*Greg Harvey, industrial hygienist and project manager, Environmental Management Restoration Division, Wright-Patterson AFB, Ohio, performs vegetation testing showing some TCE had been absorbed by a plantation of trees planted less than a year ago in Ft. Worth.*

Phytoremediation is the use of plants and trees to clean up contaminated soil and groundwater. The growing and harvesting of plants on a contaminated site as a remediation method is an aesthetically pleasing and solar-energy driven way to clean soil and air. It can be used along with, or in some cases, in place of conventional cleanup methods.

How does it work? Phytoremediation is a general term for several ways trees and plants clean up sites by removing pollutants from soil and water. Studies show that certain plants can break down organic pollutants by acting as filters or traps.

The plants metabolize contaminants, like trichlorethylene (TCE), a degreasing agent used to clean airplane parts, and release clean air through evaporation in the leaves. It is believed water-seeking plants can clean up metals, pesticides, solvents, explosives, crude oil, polyaromatic hydrocarbons and landfill leachates.

Officials from the U.S. Air Force, U.S. Environmental Protection Agency, Environmental Security Technology Certification Program, Air Force Base Conversion Agency, Air Force Center of Environmental Excellence, U.S. Geological Survey, and the U.S. Forest Service came together on May 13 at the Naval Air Station

*(See Phytoremediation, page 3)*

# AFP PJKS D-1 landfill site characterization

Environmental engineers managing the investigation and cleanup efforts at Air Force Plant (AFP) PJKS are initiating the Site Characterization/Risk Assessment process at a landfill site on the plant property. AFP PJKS, owned by the Air Force and operated by Lockheed-Martin, is located in Waterton, Colo.

The Site Characterization/Risk Assessment process is part of a large-scale effort to investigate past waste sites at the plant. This analytical process helps to define and determine the extent of contamination at a particular site, and the potential risks to human health and the environment. The D-1 Landfill Soil site, one of 59 sites at AFP PJKS being investigated under the Air Force's Installation Restoration Program, has been selected for site characterization and risk analysis. The Air Force is coordinating its investigation and cleanup efforts with the Colorado Department of Public Health and Environment, and the U.S. Environmental Protection Agency.

To ensure the public receives timely updates, and is included in the decision-making process concerning the investigation and cleanup at this site, a Restoration Advisory Board (RAB) has been formed. This forum is comprised of Air Force and Lockheed-Martin employees, interested community members, and representatives from various regulatory agencies. The RAB, which has an Air Force and community co-chairperson, schedules meetings on a quarterly basis. At the upcoming RAB meeting (September 23, 1997) an election will be held to select the community co-chairperson who will serve a one-year term.

This analytical process helps to define...the potential risks to human health and the environment.

In addition to this forum, interested community members can access information about the Installation Restoration Program by visiting the Information Repository located at the Columbine Branch Library, 7706 West Bowles Avenue, Littleton, Colo. Soon to be included in this repository will be the updated version of the AFP PJKS Community Relations Plan. This plan provides information about the investigation and remedial activities conducted at the plant, issues and concerns from community members, and specific points of contact to assist people desiring more information about cleanup efforts at the plant. The Draft Community Relations Plan is scheduled to be released for review and comment in September 1997.

**—Andrea Attaway-Young, ASC Public Affairs**

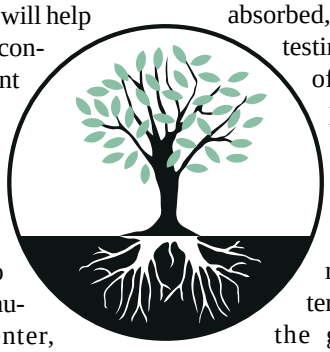
## Phytoremediation

*(Continued from page 2)*

Joint Reserve Base, Fort Worth, Texas, to showcase the Air Force's efforts at the site using phytoremediation.

A combined effort by these agencies resulted in the planting of more than 800 poplar saplings on the former Carswell Air Force Base more than a year ago. The saplings were about an inch tall when they were planted. Today, some of the trees have grown to more than 10 feet. The trees are used for a research project controlling a groundwater plume containing TCE, migrating from Air Force Plant 4.

Groundwater under the base and adjacent Air Force Plant 4, which houses Lockheed Martin Tactical Aircraft Systems, was contaminated with TCE decades ago, through past industrial practices. Two plantations of trees used in the demonstration will be monitored on their ability to pull up water from underground. It is hoped that the trees will help rid the area of the contaminant and prevent further migration of the plume.



Greg Harvey, industrial hygienist and project manager, who works in the Aeronautical Systems Center, Environmental Management Restoration Division, proposed the project to ESTCP in 1995. ESTCP provided the initial funding, as well as on going support. EPA, Superfund Innovative Technology Evaluation program, provided additional funding.

Vegetation testing in November, before the trees had been in the ground a year, showed indications that some TCE had been absorbed, Harvey said. More testing is needed before officials declare the project a success.

Through this field demonstration, selected trees are tested to determine how much water is brought up from the ground and how much is released from leaves through evaporation. Technicians also test water from 29 test wells surrounding the trees.

"Innovative thinking that ap-

*(See Phytoremediation, page 5)*

# Former aircraft facility to be sold to private industry

Downsizing? Drawdown? Divestiture? All of these words could be thought of in negative terms, but selling Air Force Plants (AFPs), or GOCO (government-owned, contractor-operated) facilities around the country can be a good thing—a good thing for the Air Force and a good thing for the communities around the plants.

Reuse leads to local employment opportunities and placement of the property on local tax rolls.

A positive aspect of re-use for the Air Force is that vacant facilities can be sold and re-used while allowing the Air Force to use the proceeds to accomplish its ongoing, environmental clean-up at the site.

For communities, the good thing is the future economic development of the facility and the "pluses" that go along with that economic development. Reuse leads to local employment opportunities and placement of the property on local tax rolls.

Lt. Gen. Kenneth E. Eickmann, commander of the Aeronautical Systems Center (ASC), will sign the title transfer of AFP 85, located in Columbus, Ohio. The title transfer will culminate many months of joint General Service Administration (GSA) and Air Force effort to dispose of this significant property. This action was allowed by special legislation, public law 100-456.

The Air Force has 10 GOCO facilities throughout the United States. Three plants have been sold — AFP 36 in Cincinnati, Ohio, and AFP 78, Brigham City, Utah, and now, AFP 85 in Columbus. The divestiture team at the ASC, Acquisition Environmental Management Directorate orchestrated the action to prepare the property for sale. The Federal Government will continue environmental cleanup activities for contamination. This contamination occurred prior to sale, while reserving the right of the Air Force to pursue other potentially responsible parties to contribute to the cleanup costs.

The GOCO facilities are typically huge complexes on large tracts of land. AFP 85, for example, has approximately 3.3 million square feet of building space, spanning five major buildings located on 205 acres of land with access to the Port Columbus Airport.

As late as 1994, AFP 85, operated by McDonnell-Douglas, was an aircraft parts producing facility.

Today, production of critical weapon systems for the Air Force was, and in some cases, still is accomplished at the plants. These GOCOs are largely a legacy from World War II. In support of WWII, the Army Air Corps acquired over 100 plants, mostly automotive, across the country for conversion to aircraft industry facilities.

Most of the Air Force GOCO plants today were created during this time and transferred from the Army to the Air Force upon creation of the Air Force 50 years ago as a separate service.

Because this GOCO system worked well, additional plants were acquired during the Cold War era of the 1950s and 1960s. The mobilization for the race to dominate the missile and space industry created a need for another industrial expansion. Previously owned plants were reacquired, new plants were constructed, and the government acquired title to contractor-owned property.

*Aerial View of AFP 85*

There were about 30 plants in the inventory in the 1950s and 1960s. The early 1970s brought a new policy, whereas, maximum reliance would be placed upon the private sector to provide industrial facilities, and the government would divest itself of facilities excess to its ownership needs. According to historical accounts, exceptions to this policy are allowed when no domestic non-government capability exists, or when it is economically unrealistic to expect that non-government capability can be made available.

The implementation of this policy resulted in the Air Force divesting ownership through sale or transfer of some GOCO plants.

The proceeds from the sale of the facilities, like AFP 85, can be used for environmental cleanup of the industrial plants. This saves taxpayer dollars, and that savings is definitely a **good thing.**

**—Kay Binzer, ASC Public Affairs**

# New citizens' group will monitor cleanup at Air Force Plant 42

Antelope Valley residents signed a charter May 13, officially launching the formation of a community board that will become involved in environmental activities at Air Force Plant (AFP) 42 in Palmdale, Calif.

Comprised of 13 citizens from neighborhoods surrounding the plant, the AFP 42 Environmental Restoration Advisory Board (ERAB) meets quarterly to get up-to-date information and provide feedback to decision-makers on the investigation and cleanup of 27 sites at AFP 42. Contaminants such as petroleum products, heavy metals and paints were discovered at the sites during earlier investigations, and are now part of an extensive, plant-wide restoration program.

According to George Warner, restoration project manager for AFP 42, the primary function of the board is to enhance community awareness of the cleanup program, and to obtain constructive community review and comment on proposed restoration activities and projects. Although the board provides feedback on environmental activities, Warner clarified that it is not a decision-making body that votes on cleanup options for the plant.

"The board ideally will connect us to community members and provide a direct flow of information between the Air Force, environmental regulators and local residents," explained Warner, who works for the Aeronautical Systems Center, Acquisition Environmental Management Directorate at Wright-Patterson Air Force Base in Ohio.

*(See Citizens' Group, page 6)*

## Community Activities CALENDAR

**Air Force Plant 4, Fort Worth, Texas**
- Restoration Advisory Board Meeting, November 13, 1997

**Air Force Plant PJKS, Waterton, Colorado**
- Restoration Advisory Board Meeting, September 23, 1997
- Draft Community Relations Plan to be completed September 1997

**Air Force Plant 42, Palmdale, California**
- Environmental Restoration Advisory Board Meeting, 6:30 p.m., September 10, 1997
- Holding community interviews September 8, 9 & 10, to update Community Relations Plan

**Air Force Plant 44, Tucson, Arizona**
- Unified Community Advisory Board Meeting, 6:00 p.m., September 17 and October 15, 1997
- Society of Environmental Journalists Tour of AFP 44, October 2, 1997

**Editors Note:** The above dates are subject to change. For the latest updates, look for notices on meetings and other events in your local newspaper or through direct mailings to your home. For more information, call 1 (800) 982-7248, ext. 301.

### Renewal

*(Continued from page 1)*

ing them, the area was reseeded with 27 different species of native plants. The original desert plant community, which flourished on this stretch of land before the ponds were built, is once again returning to the former waste disposal area.

*Hazardous sludge is removed from one of the ponds*

In recognition of its success, the AFP 44 pond closure project was placed on the "Renew America Environmental Success Index." The database lists programs from across the nation that have been deemed effective for renewal and protection of the environment.

**—Larine Barr, ASC Public Affairs**

### Phytoremediation

*(Continued from page 3)*

plies inexpensive technologies is essential to the success of the Air Force environmental cleanup programs," said Maj. Will Cassidy, Air Force Environmental Restoration Program manager.

EPA is releasing a new document about on-site cleanup of toxic metals, including phytoremediation, Walter W. Kovalick, Jr., director, EPA Technology Innovation Office of Solid Waste and Emergency Response, said. In addition, they have created a new partnership with six companies to promote development of similar cleanup methods.

"While there is nothing new under the sun there are a lot of old things we know nothing about," said Ambrose Bierce, former Army civil engineer and famous journalist.

Cheaper, innovative and natural methods of hazardous waste cleanups using techniques Mother Nature originally developed takes the old and makes it new again.

# Air Force Plant 6 progresses through cleanup

Air Force environmental managers continue to make progress in clean up efforts at Air Force Plant (AFP) 6 in Marietta, Ga. This includes the overall investigation into the nature and extent of potential contamination, as well as, the treatment of "hot spots" of localized contamination.

The installation of the Boundary Control groundwater pump-and-treat system to prevent the trichloroethylene (TCE) contaminant plume from migrating off-site is expected to start operation July 1998.

Due to an accidental release of approximately 1,000 gallons of TCE in 1983, a contaminant plume exists in the soil and groundwater under portions of AFP 6. As of July 1997, over half of the extraction wells needed for the system were in place along South Cobb Drive and around the AFP 6 boundary. Groundwater pumped by these wells will be filtered to remove solids and then sent to a retention tank. Next, the water is pre-treated to remove the TCE and then sent to the industrial wastewater treatment plant (IWTP) for final treatment. Boundary Control gives environmental managers the opportunity to complete the investigation of the groundwater plume, while containing it on-site and preventing its migration. When complete, the system will handle 500,000 gallons of water per day.

When complete, [the Boundary Control] system will handle 500,000 gallons of water per day.

Construction of the Building 76 TCE Spill Area "Hot Spot" Treatment system is progressing. Final design of the project is complete and all extraction wells are in place. The treatment system, which uses a combination of groundwater pump-and-treat and Soil Vapor Extraction (SVE), is expected to be in operation by May 1998. Groundwater is pumped and treated, and sent to the IWTP for final treatment. The SVE system will pump the TCE vapors from the soil before they can migrate into the groundwater. The vapors are treated to remove the TCE, the clean air is released and the TCE is pretreated and sent to the IWTP for final treatment. This type of treatment cleans the groundwater and treats the source of the TCE contamination.

A new "Hot Spot" removal action is being initiated at the C-5 Wash Rack on the southeast side of the plant. Investigation has determined that the area contains a diesel fuel and gasoline mix in the soils. To treat this, a technology called BioSlurping is planned. BioSlurping (also known as Vacuum-mediated Free Product Recovery/ Bioremediation) uses a vacuum to draw air from the soils surrounding the extraction well. As this air flows up the "slurp" tube, the diesel/gas mix is "slurped" up the tube in the form of a column of liquid, slugs, droplets, vapor, and/or a film. BioSlurping is the technical equivalent of drinking through a straw. When the bottom of the glass is reached and, as long as a vacuum is applied, any remaining liquid is pulled up, as well as that awful noise, hence the name BioSlurping. In addition, as air is pulled through the soils, oxygen promotes the growth of microbes, which in turn break down petroleum in the soils through bioremediation. A pilot test to determine the effectiveness and applicability of this treatment is scheduled to start in May 1998.

**—Andrea Attaway-Young, ASC Public Affairs**

## Citizens' Group

*(Continued from page 5)*

Michael Miller, an environmental inspector for the city of Los Angeles, was elected as the board's community co-chair. He brings scientific and technical expertise to the volunteer post, as well as a keen interest in the plant's environmental program.

"As community co-chair, my goal is to keep the board focused on what we are here for — a form of communication between citizens and government — for our concerns to be expressed and replied to, and government actions to be explained and justified," explained Miller. "We want to have a thorough understanding of as wide an area as possible concerning AFP 42 remediation projects, and also have the opportunity to express our concerns and hopefully be able to provide input in the direction taken towards cleanup."

A librarian at Lancaster Library, Paula Hock joined the board because it is a place where she can act on two of her values: volunteerism and a healthy environment. She envisions the group as providing an "honest exchange" of information from AFP 42 to the community and from the community to AFP 42.

Reaching the milestone at

*(See Citizens' Group, page 7)*

# Air Force continues cleanup efforts in Tulsa

The Aeronautical Systems Center has transferred Air Force Plant 3 to the City of Tulsa, but Air Force responsibilities do not stop when it comes to cleanup efforts. The Air Force is preparing to remove low-level radioactive waste from a site at the plant.

In the 1950s and 1960s, the site, located in the southeast corner of the plant, was used for disposal of radioactive instrument dials and vacuum tubes. These items were wrapped in lead foil and deposited in six burial vaults about five to 10 feet deep. Concrete was poured around the containers and the vaults were covered with soil. This site is surrounded by a locked, chain-link fence, and the area above the waste disposal site is grass-covered and vacant.

In 1987, a field radiation analysis was performed at the Radioactive Waste Disposal Area. Soil cuttings were scanned in the field and no radiation was detected.

*Aerial view of AFP 3.*

In 1992, further investigative work at the site was performed. This work consisted of one soil boring and field scanning the drill cuttings for radioactivity. The scan indicated that the soils were not radioactive at a level that would be hazardous to human health and the environment.

This follow-on investigation did not reveal any other contaminants, such as volatile organic compounds. The removal of the buried instruments will begin in September. This removal is being conducted by the Air Force Office of Radioactive Waste.

**—Kay Binzer, ASC Public Affairs**

*Artist conception of RAD waste site from the 1950s & 1960s.*

## Citizens' Group

*(Continued from page 6)*

which the charter was signed represents a two-year endeavor orchestrated by the Air Force. During this period, Air Force employees held workshops on the cleanup program and organized a tour of the plant to gauge the level of community interest in environmental issues at the facility. According to Warner, these activities signaled the need to go forward with establishing the board. Creating the board and holding regular meetings is a major component of the Air Force's community outreach effort, conducted in tandem with the plant's Installation Restoration Program.

"The ERAB's formation is really encouraging," Hock affirmed "It indicates that the Air Force and AFP 42 take seriously its position and responsibility in our community. I'm also very impressed with our ERAB community members who have demonstrated their concern and commitment by sticking with this formation process for two years."

Setting a goal for the board, Hock would like to see the number of community participants expand and invites all interested persons to attend future meetings. The next ERAB meeting is set for September 10, 6:30 p.m., at the Antelope Valley Inn, and is open to the public.

**—Larine Barr, ASC Public Affairs**

*Community members take a tour of AFP 42 cleanup sites.*

# How you can get more information

There are several ways for citizens with an interest in Air Force environmental cleanup efforts and other activities to get more information.


## Mailing Lists

We continually update our mailing lists for each Air Force plant to provide citizens with the most up-to-date information.

## Internet

To access the ASC/EM Home Page, type **http://www.ascem.wpafb.af.mil** at the location line of your internet software package. To e-mail ASC Public Affairs personnel:

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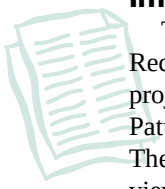
## Toll-free Phone Number

To add, change, or delete a name from a mailing list, request information on specific plants or topics, or other information, call the ASC toll-free Public Affairs number at (800) 982-7248. Extensions include: Andrea Attaway-Young, ext. 301, Larine Barr, ext. 322, and Kay Binzer, ext. 346.



## Administrative Record/ Information Repository

The Air Force maintains an Administrative Record containing all documents on cleanup projects for each Air Force plant at Wright-Patterson Air Force Base in Dayton, Ohio. The record is available to the public for review. The Air Force also maintains an information repository near each plant, which contains information pertinent to the cleanup effort, as well as related material.

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